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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,351	08/15/2001	Ronald P. Doyle	5577-243	3470

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MYERS BIGEL SIBLEY & SAJOVEC  
PO BOX 37428  
RALEIGH, NC 27627

EXAMINER

POWERS, WILLIAM S

ART UNIT PAPER NUMBER

2134

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/930,351

Applicant(s)

DOYLE ET AL.

Examiner

William S. Powers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 10-12, 20-25, 29-43 and 45 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1, 10-12, 20-22, 24, 25, 29, 31-33, 35, 36, 40-43 and 45 is/are rejected.  
7) ☒ Claim(s) 2, 3, 4, 5, 6, 23, 30, 34, 37, 38 and 39 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

***Specification***

1. In view of Applicant's amendments, all objections to the specification are withdrawn.

***Claim Objections***

2. In view of Applicant's amendments, all objections to the claims are withdrawn.

***Claim Rejections - 35 USC § 101***

3. In view of Applicant's amendments, all 101 rejections to the claims are withdrawn.

***Response to Arguments***

4. Applicant's arguments, see pages 14-15 of Applicant Remarks, filed 10/03/2005, with respect to the rejection(s) of claim(s) 1-2 under 35 USC 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of "Internetworking with TCP/IP, Volume 1" by Douglas Comer.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 10, 11, 31, 40-43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Internetworking with TCP/IP, Volume 1" by Comer in view of US Patent No. 6,754,716 to Sharma et al. (hereinafter Sharma).

As to claims 1, 40 and 45, Comer discloses:

- a. Resolving an IP address of a packet with its physical or MAC address (page 75, section 5.5, paragraphs 2-3).
- b. An ARP cache to maintain IP and physical address bindings (page 76, section 5.6, paragraph 1).
- c. Sending an ARP request if there is no binding to the IP address (page 78, lines 1-3).
- d. Receiving an ARP reply message to a request message and incorporating the address bindings in the ARP cache (page 76, section 5.6, paragraph 1).

- e. Discarding the packet if no ARP reply is received from the ARP request (page 78, section 5.9, paragraphs 1-2).

Although Comer does disclose discarding a packet when there is no evidence of a binding between the IP address and the physical address of a packet, he does not expressly mention that the packet is spoofed.

Sharma teaches that a packet is determined to be spoofed if the IP address and the MAC address of a router are not bound in an Address Resolution Module table in order to prevent fraudulent access to a target host's MAC address (column 5, lines 21-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the address resolution protocol of Comer with the spoofing designation of Sharma in order to prevent fraudulent access to a target host's MAC address.

As to claim 10, Comer teaches not adding an IP address to an ARP table if there is no response to an ARP request (page 78, section 5.9, paragraphs 1-2).

As to claim 11, Comer teaches not adding an IP address to an ARP table if there is no response to an ARP request (page 78, section 5.9, paragraphs 1-2).

As to claim 31, Sharma teaches networked computers with memory (column 4, lines 22-24) that discard packets that are spoofed (column 5, line 44-column 6, line 19).

As to claim 41, Sharma teaches a system comprising a router (column 5, lines 7-20).

As to claim 42, Sharma teaches monitoring incoming packets for spoofed addresses (column 5, lines 21-33).

As to claim 43, Sharma teaches a system comprising endpoint or destination devices (column 5, lines 21-33).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over "Internetworking with TCP/IP, Volume 1" by Comer in view of US Patent No. 6,754,716 to Sharma et al. (hereinafter Sharma) as applied to claim 1 above, and further in view of US Patent No. 6,442,144 to Hansen et al. (hereinafter Hansen).

As to claim 12, Hansen teaches determining whether or not to add an IP address of a router to a table (column 4, lines 19-42) identifying whether a device is a router or not (column 4, lines 29-67), a forwarding database/ARP cache connecting all the matching devices (column 6, lines 20-35). Hansen sets up the system to transmit packets using ARP and routers, but does not expressly mention the actual forwarding of packets. Comer teaches transmitting (page 78, lines 1-3) and discarding packets according to Address Resolution Protocol (page 78, section 5.9, paragraphs 1-2).

7. Claims 20, 21, 22, 32, 33, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Internetworking with TCP/IP, Volume 1" by Comer in view of US Patent No. 6,754,716 to Sharma et al. (hereinafter Sharma) as applied to claim 1 above, in further view of US Patent No. 5,884,024 to Lim et al. (hereinafter Lim).

As to claim 20, Sharma teaches a list of IP addresses for each network device, but does specifically mention a predefined number of addresses (column 2, lines 43-48). Lim teaches a preset limit of IP addresses assigned to a device (column 3, lines 49-51) and, if the limit is exceeded, execution of the packet is stopped (column 8, lines 56-65) in order to reduce "the probability of IP address misuse" (column 1, lines 50-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the ARP and spoofing designation of Comer and Sharma with the preset limit of IP addresses in order to reduce "the probability of IP address misuse" (column 1, lines 50-52).

As to claim 21, Lim teaches the assigning of IP addresses to client systems that initiate communication sessions with other clients (column 5, lines 27-48).

As to claim 22, Lim teaches that the IP addresses are associated with the MAC address of the client system (column 5, lines 27-48).

As to claim 32, Lim teaches a preset limit of IP addresses assigned to a device (column 3, lines 49-51) and, if the limit is exceeded, execution of the packet is stopped (column 8, lines 56-65).

As to claim 33, Sharma teaches that a packet is determined to be spoofed if the IP address and the MAC address of a router are not bound in an Address Resolution Module table in order to prevent fraudulent access to a target host's MAC address (column 5, lines 21-33).

As to claims 35 and 36, Lim teaches a preset limit of IP addresses assigned to a device (column 3, lines 49-51).

8. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Internetworking with TCP/IP, Volume 1" by Comer in view of US Patent No. 6,754,716 to Sharma et al. (hereinafter Sharma) as applied to claim 1 above, in further view of US Patent No. 6,289,377 to Lalwaney et al. (hereinafter Lalwaney).

As to claim 24, Comer and Sharma teach the forwarding of packets if the IP address is known (Sharma, column 7, lines 10-19), but does not specifically mention the use of Dynamic Host Configuration Protocol (DHCP) request packets. Lalwaney teaches the use of DHCP to manage IP and MAC addresses of a network device (column 3, lines 30-32) and forwarding DHCP requests, as identified by the IP address



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of the packet (column 4, lines 38-51) in order to provide dynamic network configuration (column 1, lines 16-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the ARP and spoofing designation of Comer and Sharma with the forwarding of DHCP request packets of Lalwaney in order to provide dynamic network configuration (column 1, lines 16-17).

As to claim 25, Comer and Sharma teach the forwarding of packets if the IP address is known (Sharma, column 7, lines 10-19), but does not specifically mention the use of Dynamic Host Configuration Protocol (DHCP) request packets. Lalwaney teaches the use of DHCP to manage IP and MAC addresses of a network device (column 3, lines 30-32), forwarding DHCP requests, as identified by the IP address of the packet (column 4, lines 38-51) and examines the contents of the DHCP message before forwarding (column 5, lines 5-12).

9. Claim 29 rejected under 35 U.S.C. 103(a) as being unpatentable over "Internetworking with TCP/IP, Volume 1" by Comer in view of US Patent No. 6,754,716 to Sharma et al. (hereinafter Sharma) as applied to claims 1 and 11 above, in further view of US Patent No. 6,182,226 to Reid et al. (hereinafter Reid).

As to claim 29, Comer and Sharma teach the discarding of spoofed packets, but do not expressly mention the logging of the MAC addresses of the senders of the

packets. Reid teaches collecting information about an attacker, including the source and route used to reach the system (column 4, lines 35-43) in order to control interactions between networks (column 1, lines 54-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the ARP and spoofing designation of Comer and Sharma with the collecting of attacker information in order to control interactions between networks (column 1, lines 54-56).

### ***Allowable Subject Matter***

10. Claims 2, 3, 4, 5, 6, 23, 30, 34, 37, 38 and 39 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William S. Powers whose telephone number is 751 272 8573. The examiner can normally be reached on m-f 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached at (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
WSP

January 31, 2006

  
ALBERT DEADY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100